NEWS AND NOTES

Dr. E. J. Durand, instructor in botany in Cornell University, spent the last two weeks of August at the Garden, consulting the collections of fleshy discomycetes in preparation of manuscript for "North American Flora."

Miss M. F. Barrett, instructor in the State Normal School, Montclair, N. J., was in residence at the Garden during the month of July, preparing a monograph of the North American species of gelatinous fungi.

A temporary fellowship has been established at Cornell University by the Niagara Sprayer Company to investigate the value of commercial lime-sulfur mixtures as fungicides.

The subject of "Variation of Fungi due to Environment" is treated by F. L. Stevens and J. G. Hall in the *Botanical Gazette* for July, 1909. The effect of the following factors on the growth of different species of fungi is discussed: density of colonies; density of mycelium; chemical relations; light relations; and variations due to unknown factors. The subject of variation in spore measurement under different conditions is discussed at some length. The article is illustrated with thirty-seven figures.

A revision of the genus *Sphaerosoma* by Casimir Rouppert appeared in the *Bulletin de l'Académie des Sciences de Cracovie* for June, 1909. Four species of this genus are recorded for the world. The single North American species, *Sphaerosoma echinulatum* Seaver, is also recorded for Europe.

The Minnesota Botanical Studies for June, 1909, contains a monograph of the Pezizales, Phacidiales, and Tuberales of Minnesota by Daisy S. Hone, who for several years past has been

engaged in a study of the discomycetes of that state. The monograph is accompanied by six plates.

The *Agricultural Bulletin of the Straits* for July, 1909, contains descriptive accounts of two fungi parasitic on Para rubber trees. One is an ascomycete, which first attacks the shoots and later descends to the trunk, killing the tree very quickly, in much the same way as does the chestnut canker in this vicinity. Cutting away affected branches and spraying with Bordeaux mixture is recommended for this disease.

The other disease is caused by a species of *Hymenochaete,* probably *H. noxia* P. Henn., which attacks the roots of the tree, slowly covering the larger roots with a bright brown layer, causing them to dry up. No remedy is recommended.

Mr. Lars Romell makes the following observation regarding the spores of *Polyporus Colossus*:

"I do not know on what observation the statement is based that this species has hyaline spores. I fear, however, that it will not be found correct. I have noted that their color is a mixture of cream and olivaceous, a color which the hymenium also assumes, at least in advanced age. The spores may be hyaline in young stages, perhaps, but when mature they are always colored, I think. In the type specimen at Upsala the spores were cream-olivaceous, obovate, punctate-scabrous, 15–18 × 8–12μ. The hyphae of the hymenium were about 3 (or 2–5) μ thick and those of the punk 3–6μ thick, and undulate.

"It may be added that *Polyporus leucocreas* and *Ganoderma obokense* have the same characters as *Polyporus Colossus,* and, in my opinion, should be considered synonyms of it."

Circular No. 35 of the U. S. Department of Agriculture, by Perley Spaulding, deals with the causes and distribution of the white pine blights in the United States. During the last five years complaints of white pine leaf-blight have been coming in, which complaints are becoming more frequent from year to year. The case is of special importance since we are now dependent upon second growth of white pine for our lumber supply, and

the young white pine is especially susceptible to diseases which may result from the most trivial wound.

The blight is characterized by the death of the apical portion of the leaf, which may extend over one fourth or one third of its length or entirely to the base, causing premature falling of the leaves. During the early stages of the disease the leaves become reddish-brown, but a few months later the color fades so as to be much less conspicuous, which change of color is likely to be mistaken for an improved condition of the trees.

The leaf-blight is known to extend from the southern part of Maine and northern New Hampshire and Vermont to the Hudson Valley, central Pennsylvania and along the Alleghanies to western North Carolina, but apparently does not occur in the higher altitudes of the north, as it has not yet been found in the Adirondacks.

Several species of fungi have been found to accompany the blight, any one or all of which may have to do with its existence. Such physiological factors as winter-killing, sun-scald, injurious gases, etc., may or may not be concerned. The disease may cause the death of the affected trees in a single season or it may require two or more seasons to accomplish its purpose.

A study of the disease seems to indicate that comparatively few trees have been killed and timber owners have no occasion for undue alarm, as in many cases the trees show a tendency to recover from the blight. There is at present no known reason for cutting healthy trees of young pine among which are scattering trees affected by the leaf-blight.

Dr. William W. Ford, of the Bacteriological Laboratory of Johns Hopkins University, delivered an address before a special meeting of the Boston Mycological Club, June 14, 1909, on the distribution of poisons in mushrooms, which was printed in *Science* for July 23. Dr. Ford has carefully investigated and experimented with a number of species of mushrooms in recent years, and his conclusions, as given in this address, probably represent the most reliable information on this subject at the present time.

The deadly *Amanita phalloides,* with its several varieties, was

found to contain two poisons, one active in the raw plant only and the other resisting both cooking and digestion. Atropine is still considered a perfect antidote for muscarine, found in *Amanita muscaria,* but another poison may perhaps be present also in this species.

Amanita rubescens and *A. solitaria* contain the same blood-destroying toxin found in uncooked plants of *A. phalloides,* but this is destroyed by heat. On the other hand, this poison is absent in *A. strobiliformis, A. chlorinosma, A. radicata* and *A. porphyria,* and the deadly and resistant amanita-toxin is present in quantity. *A. Frostiana* has not yet been proven poisonous, which indicates that it is quite distinct from *A. muscaria.*

Russula emetica is mentioned as a strong irritant; *Helvella esculenta* contains a poison similar to that found in uncooked *A. phalloides;* certain phalloids of fetid odor are uniformly fatal to hogs; species of *Volvaria* are questionable; and *Boletus luridus* occasionally disturbs the system for a time, but has a very objectionable taste, which prevents it from being eaten in quantity. No authentic cases of true poisoning, according to the author, are known among the black-spored or brown-spored agarics. In conclusion, Dr. Ford remarks:

"The examination of these various species of fungi, representing now nearly twenty distinct forms, demonstrates one or two facts which should be particularly emphasized. In the first place, our methods of chemical analysis of mushrooms, and especially the methods of isolating their poisons, are now so developed that a little material, two or three small specimens in fact, and even one good-sized plant, may be studied and an opinion be given as to the properties of the species. In the second place, a more extended investigation should be carried out in regard to the properties of all the mushrooms believed on clinical grounds to be poisonous, but of which no laboratory study has thus far been made. Finally, such a piece of work, to be of lasting value to Science, can only be accomplished through the coöperation of trained mycologists who can identify with certainty the species of mushrooms selected for study."